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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 09/978,305  | 10/17/2001  | Robert E. Sterling   | T2281-907508        | 4336             |
| 7590  | 12/09/2003  |                      | EXAMINER            |                  |
| Dennis P. Clarke<br>Miles & Stockbridge<br>Suite 500<br>1751 Pinnacle Drive<br>McLean, VA 22102 |             |                      | MOORE, MARGARET G   |                  |
|   |             |                      | ART UNIT            | PAPER NUMBER     |
|   |             |                      | 1712                |                  |

DATE MAILED: 12/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/978,305

**Applicant(s)**

STERLING ET AL.

**Examiner**

Margaret G. Moore

**Art Unit**

1712

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 to 13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3, 4, 6 to 13 is/are rejected.
- 7) ☒ Claim(s) 2, 5 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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1. Upon reconsideration and upon further review of the prior art, the Examiner has had to modify some of the rejections of record in this application and as such, has issued the following rejection. Since this action is in response to an Appeal Brief, this action cannot be made final.

2. Regarding the previous rejection of the phrase "silanol terminated derivative" as being indefinite, the Examiner notes that applicants do not offer a specific definition for this phrase. Instead applicants generally refer to patents in which the term is present. While it is unclear what type of relationship these patents have to the instant application, what type of relationship any of the polymers in these patents have to the formula (I) or why applicants would rely on nonanalogous art to define their invention, the Examiner concedes to applicants' position that this term be used with no further definition. This would eliminate any type of "derivation" other than that creating silanol terminal groups. As such, it is held that the silanol terminated derivatives of the polyfluoroalkylsiloxane (I) be limited only to polyfluoroalkylsiloxanes of formula (I) having terminal OH groups rather than terminal  $R_2$  and  $R_5$  groups.

3. The Examiner acknowledges applicants' citations from a dictionary indicating that "copolymer" is the product of the polymerization of two substances. However she draws attention to other definitions of copolymer which differ from that provided by applicants. For instance, both Webster's Third International Dictionary and Encyclopedia Britannica define copolymer (or ~~copolymerized~~ <sup>copolymerized</sup>) as using two or more reactive compounds. The term "copolymer" is commonly used to encompass the polymerization of two or more monomeric units and embraces the term "terpolymer". See also "copolymer" in The Condensed Chemical Dictionary.

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 4 and 6 to 13 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Evans et al.

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Previously the Examiner had rejected only claims 11 to 13 as being anticipated by Evans. Upon reconsideration, it would appear that claims 4 and 6 to 10 should be included in this rejection. Furthermore the Examiner has changed the ground for this rejection to a 102/103 rejection, for reasons noted below.

First, with regards to the inclusion of claims 4 and 6 to 10, the Examiner notes that these claims have a limitation consistent with that found in claim 11; a limitation that the concentration of the additive through (misspelled thorough) a cross section is lower in the interior thereof and higher at the surfaces thereof. The Examiner notes that the terpolymer additive in Evans et al. is defined as a self bleed additive and as such it will inherently be in a higher concentration on the surface than the interior.

The Evans et al. reference has been discussed. With regards to the anticipation rejection, the Examiner notes that in the final rejection attention was drawn to component E, a silanol terminated fluorosilicone, that meets the formula (I) having silanol terminal groups. The viscosity of this fluid corresponds to an "n" value within that claimed for formula (I) and, while Evans does not specifically teach what the corresponding R<sub>1</sub>, R<sub>3</sub>, R<sub>4</sub>, R<sub>6</sub> and R<sub>7</sub> groups are, the Examiner notes that each of these alkyl groups can be fluorinated (see page 4 of the specification) and as such the component I appears to meet the additive in claims 4 and 11. While this was noted in the previous rejection, applicants did not address this position in their response. This compound is added in an amount that meets that claimed.

On the other hand, the Examiner improperly interpreted the teachings of Evans et al. In the final office action, the Examiner relied upon examples using 2.5 and 4 percent of an additive. A closer review of Tables 2-A and 2-B indicates that the additive added in these amounts does not correspond to formula (I). While working examples use the terpolymer component in an amount greater than 5 parts per 100 parts resin, column 4, lines 45 to 55, teaches that when used as a self bleed additive, this polymer can be added to a resin in an amount of 6 to 15 parts per 100 parts resin. Thus Evans et al. teach that the fluorosiloxane can be added to the resin in an amount of 6 parts per 100 rather than 5. However the difference between 6 and 5 is slight and one having ordinary skill in the art would have found this difference to have been obvious because

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a prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties. It would appear that the different amounts, 5 parts versus 6 parts, result in comparable properties since both final compositions contain a higher amount of the fluorosilicone on the surface of the composition than the interior. This is a new ground of rejection for the instant claims.

6. Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi.

Applicants correctly noted that claims requiring that the polyfluoroalkylsiloxane be a polytrifluoropropylmethylsiloxane are not rendered obvious by Kobayashi. Applicants' arguments focus on a gradient concentration through a cross section, and the Examiner notes that she has withdrawn the rejection over claims requiring that the additive have a higher concentration on the surface of a cross section rather than the interior. Upon reconsideration, she agrees that Kobayashi fails to adequately suggest this limitation. However such a limitation is not present in claim 1.

The Examiner notes that claim 1 merely requires that the additive be added to a thermoset resin having a higher surface energy than the additive. Patentee teaches using the polymers in Kobayashi, which have a low surface tension, as an additive for modifying the properties of rubbers and resins. From this it would naturally follow that the rubber or resin would have a higher surface energy than the fluorosilicone. As such, this limitation regarding surface energy would have been obvious over the teachings of Kobayashi.

The only other difference in between the claims and the prior art lies in the amount of additive, and the Examiner maintains that one having ordinary skill in the art would have found the claimed amounts to have been within routine experimentation since one would have been motivated to add the fluorosiloxane of Kobayashi to a resin in various amounts to obtain the known benefits and properties thereof. In this manner the Examiner maintains the obviousness of these claims.

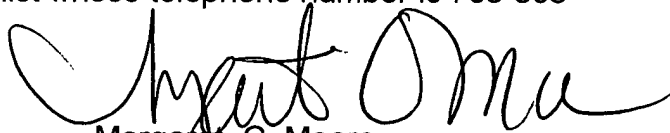
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Applicants' arguments that there is nothing in Kobayashi that would enable one skilled in the art to arrive at the claimed gradient concentration that is the crux of the invention carries no weight since this is not a claimed limitation.

7. In an effort to expedite prosecution, the Examiner notes that claims 4 and 6 to 13 would be allowed if amended to require that the additive correspond to formula (I) (i.e. delete reference to the copolymer or the silanol terminated derivative). Claims 1 and 3 would be allowed in amended in the same manner, as well as amended to indicate that there is a higher concentration of the additive on the surface of a cross section of the crosslinked polymer than in the interior. Claims 2 and 5 are objected to as being based on a rejected claim but would be allowed if rewritten in independent format. The Examiner notes that there is nothing in Evans et al. to clearly indicate that the fluorosilicone terpolymer has a lower surface energy than the thermoset resin therein.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Margaret G. Moore whose telephone number is 703-308-4334. The examiner can normally be reached on Monday to Wednesday and Friday, 10am to 4pm. After December 18, 2003, the Examiner can be reached at 571-272-1090. The fax number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Margaret G. Moore  
Primary Examiner  
Art Unit 1712

mgm  
11/28/03